

## ERIOPHYLLUM AND MONOLOPIA

LINCOLN CONSTANCE

In undertaking a critical study of the genus *Eriophyllum*, one of the first problems encountered is that of finding characters to distinguish this group clearly from the closely related genus *Monolopia*. Most of the species of the two genera are not apt to be confused, but the smaller forms, lacking the characteristic tooth on the ligules, belonging to Gray's (1) section *Pseudobahia* of *Monolopia*—which Rydberg (5) raised to generic status—and *Eriophyllum ambiguum* Gray, show a remarkable intergrading of characters, which makes them extremely difficult to place with confidence. The members of *Pseudobahia* have been treated differently by successive taxonomists, and they and *Eriophyllum ambiguum* have been transposed from one genus to the other until the synonymy has become quite confusing.

The questionable species and the characters most frequently used in differentiating them are as follows:

1. *MONOLOPIA MINOR* De Candolle, Prodr. 6: 74. 1837. *Eriophyllum minus* (DC.) Rydberg, N. Am. Fl. 34: 86. 1915.

Leaves mostly pinnately 3-5 parted, the divisions linear; involueral bracts distinct to the base or somewhat united, in 2 series; receptacle naked, sharply conical; disk-corollas glabrous; achenes of both ray- and disk-florets distinctly flattened, glabrous; epappose. An obscure plant, collected somewhere in California by Douglas, and not reported since.

2. *MONOLOPIA BAHIAEFOLIA* Bentham, Plantae Hartwegianae. 317. 1849. *Eriophyllum bahiaefolium* (Benth.) Greene, Fl. Franc. 446. 1897. *Pseudobahia bahiaefolia* (Benth.) Rydberg, N. Am. Fl. 34: 83. 1915.

Leaves entire or somewhat 3-lobed; involueral bracts distinct to the base or somewhat united, in 1 series; receptacle naked; sharply conical; disk-corollas glabrous, except for a ring of villous hairs at the junction of the tube and throat; achenes of both ray- and disk-florets distinctly flattened, hairy; epappose. This is apparently also a rare plant, from the Sierra Nevada foothills, and adjacent plains, and few specimens are to be found in the herbaria studied.

3. *MONOLOPIA HEERMANNII* Durand, Jour. Acad. Nat. Sci. Phila. 2 ser. 3: 93. 1855. *Monolopia bahiaefolia* Benth. var. *pinnatifida*, Gray, Botany of the Geol. Surv., of Cal. 1: 383. 1876. *Eriophyllum Heermannii* (Dur.) Greene, Fl. Franc. 444. 1897. *Pseudobahia Heermannii* (Dur.) Rydberg, N. Am. Fl. 34: 83. 1915.

Leaves pinnately parted, the lobes again lobed or divided; involueral bracts distinct to the base or somewhat united, in 1 series; receptacle naked, sharply conical; disk-corollas glabrous, except for a ring of villous hairs at the junction of the tube and throat; achenes of both ray- and disk-florets distinctly flattened, pubescent; epappose. This is also from the Sierra Nevada foothills, and is apparently more common than the last, since it is well represented in the herbaria. It may very

possibly be a variety of the last, as Gray (1) regarded it, differing from it only in the greater division of the leaves, and agreeing with it in the peculiar localized hairiness of the corollas.

4. *ERIOPHYLLUM AMBIGUUM*, Gray, Proc. Am. Acad. 19: 26. 1883  
*Bahia Wallacei* Gray, Proc. Bost. Soc. Nat. Hist. 7: 145. 1859.  
*Lasthenia (Monolopia) ambigua* Gray, Proc. Am. Acad. 6: 547. 1865.  
*Bahia ambigua* Gray, Botany of the Geol. Surv. of Cal. 1:382. 1876.  
*Bahia parviflora* Hall, in herbarium. 1907. *Eriophyllum paleaceum*  
 Brandegee, Bot. Gaz. 27:450. 1899. *Eriophyllum Parishii* Hall, in  
 herbarium. 1907.

Leaves entire or few-toothed; involuclral bracts distinct to the base or somewhat united, in 1 series; receptacle naked or paleaceous at the summit, sharply conical; disk-corollas glandular-hispid on the tube; achenes of both ray- and disk-florets quadrangular, at least the disk achenes not at all flattened, hirsute to glabrous; pappus of about 8 paleae or wanting. This is an exceedingly variable species of the desert region of Southern California; from the extremes of its variation several species have been described.

From this brief resumé of characters, it may be seen that the pubescence of corollas and achenes, and the degree of union of the involuclral bracts are not constant. In the opinion of the writer, the two genera should be separated on the basis of the conformation of the achenes, correlated with the constant absence of the pappus in some of the above, and its variable appearance in the last. The first three agree with the other species of *Monolopia* in having distinctly flattened achenes, and in being uniformly epappose. The last has the quadrangular achenes of *Eriophyllum*, and the occasional absence of pappus does not separate it from the genus, since this may occur in other species of *Eriophyllum*.

Gray (1) set forth these ideas a number of years ago, but they have not been heeded by subsequent systematists, else much needless confusion might have been avoided. He (1) placed the first three in *Monolopia*, the third as a variety of the second, and finally settled upon *Eriophyllum* for the last, where it has remained ever since. Greene (2) transposed *Monolopia bahiaefolia* and *M. Heermannii* to *Eriophyllum*, placing them close to *E. ambiguum*, but left *Monolopia minor* in the other genus. Hall (3) retains "*Eriophyllum Heermannii*" and does not discuss *Monolopia minor* nor *M. bahiaefolia*. *M. bahiaefolia* and the very closely related *M. Heermannii* are separated by Jepson (4), who retains the former in *Monolopia* and the latter in *Eriophyllum*. Rydberg sets up the genus *Pseudobahia* to include *M. bahiaefolia* and *M. Heermannii*, but inconsistently designates *M. minor* as "*Eriophyllum minus*". The treatment afforded these species by Gray seems, in the opinion of the writer, to be most clearly in line with their natural affinities.

#### REFERENCES

(1) Gray, Asa. Botany of the Geological Survey of California. 1: 382-383. 1876.

- (2) Greene, E. L. *Flora Franciscana*. 440, 445-446. 1897.
- (3) Hall, H. M. *University of California Publications: Botany*. 3: 182-184. 1907.
- (4) Jepson, W. L. *Manual of the Flowering Plants of California*. 1115, 1117. 1925.
- (5) Rydberg, P. A. *North American Flora*. 34: 83, 86. 1915.  
*University of California, Berkeley, June, 1933.*

## THE BOTANICAL EXPLORERS OF CALIFORNIA—IX.

WILLIS LINN JEPSON

### Charles Frederick Sonne

The birth place of Charles F. Sonne is said to have been on the island of Bon, a possession of Denmark. The date of his birth was July 2, 1845. When a young man he emigrated to the United States and worked in a grocery store in Boston, soon thereafter going to Denver. From this place in the early days he drove across the deserts a herd of cattle to Virginia City in Nevada. In 1876 he removed to Truckee where he was employed as a bookkeeper by the Truckee Lumber Company. It was more especially during the period of this employment that he collected with much zeal the native plants of the region of the Truckee River watershed and made large numbers of dried specimens. He numbered his specimens carefully and faithfully recorded on the labels the validating facts of locality, date and habitat. His specimens were well prepared and the mounted sheets are remarkable for their clear and handsome lettering and general neatness.

Out of the results of his long-continued field work in this region grew a list of the plants which he had collected in Placer, Nevada and Sierra counties in California and Washoe County in Nevada, especially between the years 1878 and 1892. This manuscript is done in his usual methodical and scholarly manner. It reflects, doubtless, the thoroughness of the college education which he had received in Denmark in his youth.

Dedicating to him the Boraginaceous genus *Sonnea*, E. L. Greene in 1889 said that he "gives promise of becoming as intelligent a botanist as he has been a diligent collector and field observer in that region

